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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,066	02/18/2005	Yoshihiko Kinpara	403329/SAKAI	5825

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EXAMINER


MCCLOUD, RENATA D

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/525,066	Applicant(s) YOSHIHIKO ET AL	
	Examiner Renata McCloud	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/18/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Negoro (US 6335605) in view of Tajima et al (US 5880572).

Claim 1: Negoro teach an integrator (fig. 1:8) integrating angular frequency to compute phase (col. 7:1-5); an inverter (14) that applies three phase voltage to the machine (col. 7:21-24); a current detector (fig. 1: 16,17,18); a coordinate converter (13/15) converting the detected current into two axis current components based on the phase (col. 7:24-28) and converts a voltage command on the two axis coordinates into three phase voltage (col. 7:18-22); and a voltage command unit (2) that computes the voltage on the two axis coordinates based on the frequency and current components along each axis of the two axis coordinates (col. 6:45-53). Negoro does not teach computing the voltage based on deviations in absolute values of the current. Tajima et al teach computing voltage based on deviations in absolute values of the current (fig. 5; col. 8:27- 9:26). IT would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Negoro to use absolute values as taught by Tajima et al in order to reduce current offset and voltage error.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Negoro (US 6335605) and Tajima et al (US 5880572), as applied to claim 1 above, further in view of Bharadwaj et al (US 6605912).

Claim 2: Negoro and Tajima et al teach the limitations of claim 1. Referring to claim 2, they do not teach the voltage command unit computes a current command that changes with load, produces a minor current command by dividing the absolute values of current components by the current command a and computes the voltage commands based on the minor current and frequency. Bharadwaj et al teach computing a current command that changes with load, producing a minor current command by dividing the absolute values of current components by the current command (col. 11:42-49) and computing the voltage commands based on the minor current and frequency (col. 7:45-65). IT would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Negoro and Tajima et al to calculate voltage as taught by Bharadwaj et al in order to ensure synchronism between the phases and minimize commutation losses.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Negoro (US 6335605) and Tajima et al (US 5880572), as applied to claim 1 above, further in view of Koyama et al (US 5247237).

Claim 3: Negoro and Tajima et al teach the limitations of claim 1. Referring to claim 3, they do not teach a frequency correcting unit that computes frequency correction based on the two axis current components and subtracts the frequency

Art Unit: 2837

correction from the frequency. Koyama et al teach a frequency correcting unit (fig 3: 5; fig 12:10) that computes frequency correction based on the two axis current components (fig. 3:4; fig 12:9) and subtracts the frequency correction from the frequency (6; col. 5:22-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Negoro and Tajima et al to correct the frequency as taught by Koyama et al in order to prevent overcurrent.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renata McCloud
Examiner
Art Unit 2837

RDM



MARLON T. FLETCHER
PRIMARY EXAMINER